

Applicant : Andrew G. Gilicinski et al.  
Serial No. : 10/779,502  
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Attorney's Docket No.: 08935-300001 / M-5054

**Amendments to the Drawings:**

The attached replacement sheets of drawings includes changes to Figs. 1 and 2.

Housing 44 has been identified in Fig. 2 (see page 6, lines 4-5), and the "Air Mover" has been identified properly as 30 (instead of 32) in Fig. 1 (see page 5, lines 18-22).

Attachments following last page of this Amendment:

Replacement Sheet (1 page)  
Annotated Sheet Showing Change(s) (1 page)

### REMARKS

The fuel cell system of claim 20, even prior tot his amendment, encompassed a fuel source that provides a gaseous fuel to a fuel cell. That is why claim 20 refers to a "gas mover". However, applicants have amended claim 20 to clarify further that the fuel cell system includes a gaseous fuel including an alcohol or a hydrocarbon generated in the fuel source that gets supplied to the fuel cell. Claim 20 as amended reads as follows:

A fuel cell system, comprising:

a fuel cell;

a fuel source comprising

a housing having an outlet in gaseous communication with the fuel cell,

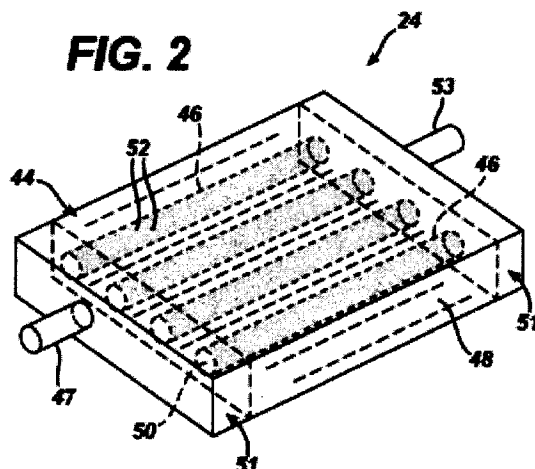
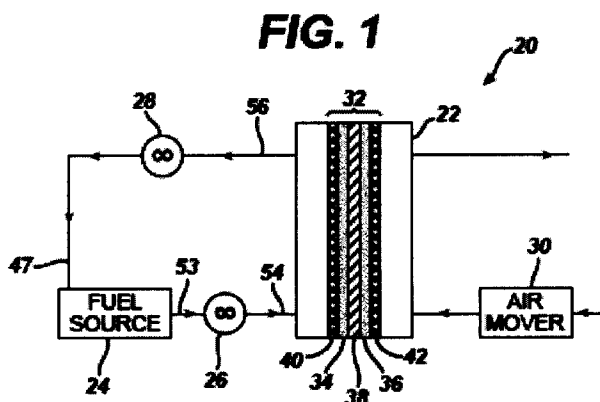
a non-gaseous fuel, comprising an alcohol or a hydrocarbon, within the housing, and

a vapor transmission element in the non-gaseous fuel and comprising a cavity and openings that prevent the non-gaseous fuel from passing into the cavity while allowing the non-gaseous fuel that converts to a gaseous fuel including to pass into the cavity,

wherein when the fuel cell system is in operation the non-gaseous fuel converts to gaseous fuel that passes through the openings into the cavity, then through the outlet of the housing, and then to the fuel cell; and

a gas mover between the fuel cell and the fuel source along a flow path of the gaseous fuel that regulates the flow of gas to and/or from the fuel cell.

Applicants will explain claim 20 describing the operation of an embodiment of claim 20 illustrated in Figures 1 and 2 of the application:



Referring to Figures 1 and 2 and to pages 5-6 of the specification, a fuel cell system 20 includes a fuel cell 32, a fuel source 24, and two gas movers 26 and 28 between the fuel source 24 and the fuel cell 32. Fuel source 24 is shown in more detail in Figure 2. Fuel source 24 includes a housing 44, a non-gaseous fuel 48 (see discussion on page 7, lines 11-15) including an alcohol or a hydrocarbon, vapor transmission elements 46 including cavities 50 and openings 52, and an outlet 53. As discussed on page 6, lines 23-24 and page 7, lines 27 – page 8, line 1:

Openings 52 are sized to allow gaseous fuel to pass through the openings while preventing non-gaseous fuel (e.g., liquid fuel) to pass, e.g., due to surface tension.

\* \* \*

During use, gas-phase fuel molecules are capable of flowing from fuel 48, through openings 52 and cavities 50 of vapor transmission elements, through outlet 53, and to anode 34 of fuel cell 32.

Claim 20 was rejected under 35 U.S.C. § 102(e) as being anticipated by Hirsch 2003/0170522 (“Hirsch”). The Examiner referred to Figure 1 from Hirsch in explaining the rejection:

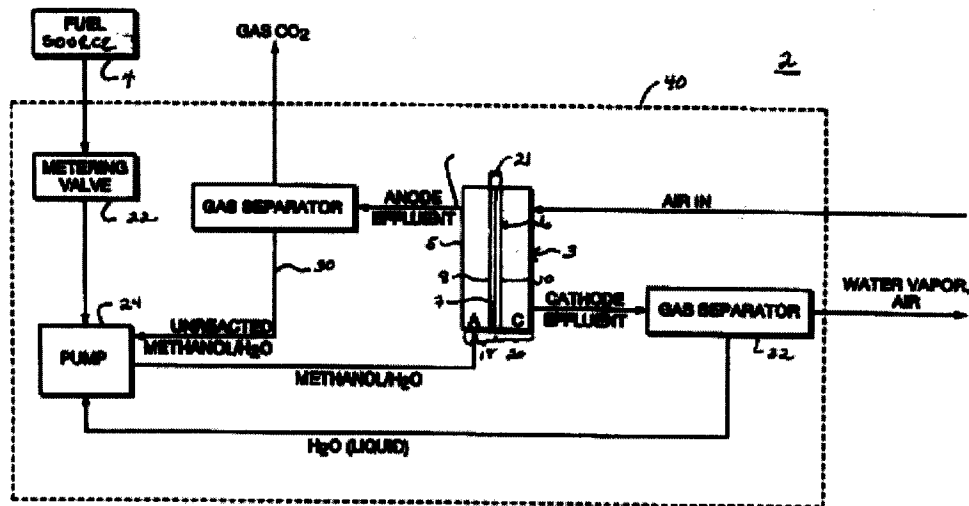


FIG. 7

[0028] The present invention is an enclosed fuel cell system. The fuel used in the system may be any liquid carbonaceous fuel including, but not limited to, methanol, ethanol, and combinations or aqueous solutions thereof.

\* \* \*

Claim 20 plainly is not anticipated by Hirsch. Hirsch's fuel cell system uses a liquid fuel, and thus fuel source 4 does not include the vapor transmission element required by claim 20.

Moreover, in operation liquid fuel in fuel source 4 is not converted to gaseous fuel that then is supplied to fuel cell 3. Applicants therefore request that the 35 U.S.C. § 102(e) rejection of claim 20 be withdrawn.

Claims 21, 22, 24, 25, and 27 also were rejected under 35 U.S.C. § 102(e) in view of Hirsch. These claims depend from claim 20, and the rejection of the dependent claims should be withdrawn for the same reasons that the rejection of claim 20 should be withdrawn.

Claim 23 was rejected under 35 U.S.C. § 103(a) as being obvious in view of Hirsch in combination with Agnew et al., 2004/0062973 ("Agnew") and alternatively in view of Kaye, 2006/0073365 ("Kaye"). Claim 23 depends from claim 20, and neither Agnew nor Kaye adds anything of significance to the discussion of claim 20 and Hirsch above. Thus, the rejection of claim 23 should be withdrawn for the same reasons that the rejection of claim 20 should be withdrawn.

Claim 26 was rejected under 35 U.S.C. § 103(a) as obvious in view of Hirsch in combination with Leach et al., 2005/0118469 ("Leach"). Claim 26 depends from claim 20 and Leach does not add anything of significance to the discussion of claim 20 and Hirsch presented above. Thus, the rejection of claim 23 should be withdrawn for the same reasons that the rejection of claim 20 should be withdrawn.

Finally, claim 28 was rejected under 35 U.S.C. § 103(a) as obvious in view of Hirsch in combination with Shah et al., 2004/0120889 ("Shah") and Leach. Claim 28 also depends from claim 20. Shah describes a hydrogen generator that includes a microporous hollow fiber having pores containing a catalyst. A fuel source contacts a surface of the fiber and the catalyst. The catalyst catalyzes the conversion of the fuel source to hydrogen, which then passes to the other side of the fiber and into a hydrogen chamber.

The microporous fibers disclosed by Shaw are carriers for a catalyst that catalyzes the production of hydrogen. The vapor transmission element required by claim 1, in contrast, is not designed to help catalyze a chemical reaction, or to carry a catalyte. Rather the vapor transmission element merely serves functions to separate gaseous fuel derived from the non-gaseous fuel in the fuel source.

Moreover, Hirsch's focus, and only emphasis, is on supplying a liquid fuel from the fuel source to the fuel cell. Hirsch has nothing to do with generating a gaseous fuel through a

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chemical reaction generally, or with supplying gaseous fuels to a fuel cell generally, or with generating and supplying hydrogen to a fuel cell more specifically. It is farfetched to argue that a person of ordinary skill in the art would somehow be led to use Shah's microporous hollow fiber used for producing hydrogen gas via a chemical reaction in Hirsch's fuel source.

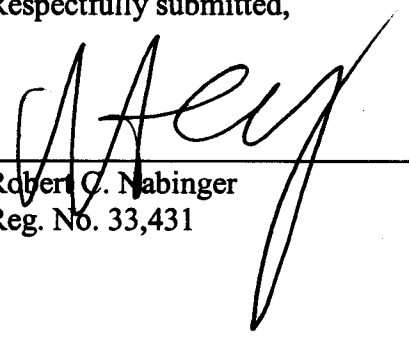
Thus, applicants request that the 35 U.S.C. § 103(a) rejection of claim 28 be withdrawn.

Applicants submit that the claims are in condition for allowance and such action is respectfully requested.

Please apply the \$450.00 petition for extension of time fee and any other charges or credits to deposit account 06-1050, referencing client-matter no. 08935-300001.

Respectfully submitted,

Date: September 5, 2007

  
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